Plain Truths

ON

A Vital Question:

The Nicaragua or the Panama Route for an Isthmian Canal.

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WHY IS AN ISTHMIAN CANAL NOT BUILT?

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The American people are demanding an answer to this question, which has been pending for over four centuries and which, ever since the promulgation of the Monroe doctrine in 1823, has been a diplomatic and political football. International jealousies, trade competitions, vested interests, partisan politics, selfish aggrandizement, rival concessionnaires, wilful misrepresentation and venal influences have all been allied to defeat the ends of progress and delay the consummation of one of the world's greatest opportunities.

South America, lying as it does entirely east of the meridian, of Florida, constitutes the greatest barrier to commerce on the face of the globe, and its circumnavigation necessitates an annual waste in ocean transportation of not less than $200,000,000, for which there is no equivalent return—a sum more than sufficient to build an isthmian canal each year; and yet action has been deferred these many years, for political purposes or lest it might be charged that the best route had not been selected or the best bargain secured,

The multitudinous phases of this question cannot be considered in a brief paper. The attempts of the Great Powers to secure control of the world's highways and particularly of the "Key to the Pacific," and their successive failures; the forcible

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seizures of its termini during the Mexican War, which almost involved the United States in a third contest with Great Britain; the diplomacy which debarred this country from taking an actual initiative as a nation for half a century; the opening of other routes in competition, which antagonized the concessions secured by private enterprise; the herculean yet scandalous efforts made by foreign promoters to secure exclusive control to the isthmian transit, and many other features of the question must necessarily be ignored for lack of space.

Having no other interest than that of aiding in advancing civilization by the introduction of great possible economies in the distribution of the world's products, and having had the benefit of some five years of personal contact with all the conditions of this problem, the writer still adheres to the conclusion reached in both the preliminary and the final reports of the Isthmian Canal Commission, of which he was a member, that "the most practicable and feasible route" for an isthmian canal, to be "under the control, management, and ownership of the United States," is that known as the Nicaragua route, although in the supplemental report the Commission found in favor of Panama. So firm is he in this conviction that he has frequently stated the measure of the superiority of this route to be so great that, even if the Panama route, works and concessions could be secured gratis, it would be wiser to decline them and adhere to the more northern transit. On the question of signing the supplemental report, the writer was confronted by the argument that if a divided opinion was presented to Congress the opposition to an Isthmian Canal was so influential as to be able to defeat legislation entirely on that ground. Being unwilling to be made the sole cause of obstruction to the building of any canal, even though it might not be the best practicable, he consented to sign the report, with the following statement of his reasons for so doing entered upon the minutes:

"He still believed that the Nicaragua Route was the better of the two, but that the scope of the investigation had expanded beyond the mere question as to which route had the superior advantages, in view of the political situation and the great probability, if not certainty, of a divided report being used by the opponents of any canal to defeat legislation. It was a question, therefore, of Panama or nothing, and as he believed firmly in the necessity of an isthmian

waterway for the general good, he had concluded that his duty to his country would be best fulfilled by waiving his objections and signing the report, with the understanding that this statement of his reasons be entered upon the minutes."

As the choice of routes is the vital issue at present, and is being emphasized by the interests which are allied against an American canal, it will suffice to confine attention to some of the physical and engineering facts which bear directly on this question.

The contest over routes has eliminated from consideration all but those of Panama and Nicaragua.

It has been persistently claimed that Panama has good harbors while Nicaragua has none, and it would be very difficult if not impossible to create harbors in Nicaragua; that the level of Lake Nicaragua is subsiding rapidly; that the northern route is much longer; that neither of them would be available for sailing craft because the Suez Canal is not; that the recent eruptions in the Windward Islands have sounded the death knell of the Lake Route; that its climatic conditions are unfavorable as compared with those of Panama; that the cost of construction, operation and maintenance would be much greater for Nicaragua; that the traffic would not justify the expense and the tolls would be prohibitive; that a railroad, under private management, would afford greater facilities; that Panama is exempt from earthquakes, and is already well known; that the canal there is partially constructed, and that this route contains no doubtful engineering problems. These and many other considerations, real and imaginary, have been scattered broadcast as arguments against the inauguration of a work so necessary for the welfare of the world at large. They are stated by pseudo-scientists, who generalize from special cases and insufficient and imaginary data.

The factors which should have greatest weight in the choice of routes are those most intimately connected with the economics of transportation—such as the volume and destination of the traffic, which is in turn a function of the distribution of population; the strategic position of the waterway; the physical and engineering advantages for all classes of vessels; the possibilties of local development, regulation, control, sanita-

tion and police, and the relative freedom from seismic influences.

In all these particulars the writer finds that the Nicaragua Route has the advantage, for the northern hemisphere contains about 88 per cent. of the population of the globe, and the shortest route between the populous centers of the North Temperate Zone lies along the circles of latitude. The nearer, therefore, the trade routes approach these lines, the greater will be the economy.

The problem is not merely concerned with the cost of traversing the isthmus from sea to sea, but with the total cost of the movement from port to port; hence it is a delusion to assert that because the Panama route is but 49 miles long and the Nicaragua is 183, the former is the better, since that statement omits entirely the greater length on the sea route by Panama for about three-quarters of the traffic, the presence of the lake and river which compose more than half of the waterway through Nicaragua, and the still more important fact that the general direction of this route lies along the most direct line while Panama is almost at right angles thereto. Moreover, there is the insuperable meteorological disadvantage attaching to the Panama route, due to position, since the Southern route lies in the region of equatorial calms which debar sailing vessels from access to Panama, without great expense for towage, while the northern location lies in the region of the trade winds, which also contribute greatly to the salubrity and comfort of this transit-way. To meet the objection due to the "doldrums" in Panama Bay, it is urged that the sailing vessel is doomed to be superseded by steamers. The present outlook would not seem to justify such a conclusion, since more than half of our registered tonnage is sail, and the tendency is strongly towards larger schooner-rigged craft. The great cargo capacity and economy of the six-masted and seven-masted vessels of this class, as well as their relative immunity from danger of fire, make them the cheapest known instrument of transportation, and this fact insures their continued existence and guarantees them a patronage by all freights not demanding great speed. In a fair wind, however, they readily hold

their own with the twelve-knot steamer, and they carry a larger cargo for a given displacement and with less than half the crew.

The rapid increase in the size of fore and aft rigged vessels is shown by the trebling of their net tonnage during the decade ending in 1894, and its doubling since that date. To ignore the sailing vessel as a factor in interoceanic transit would be a serious discrimination against one of our greatest economic possibilities, and would greatly retard the restoration of our merchant marine.

The difficulties of navigating the Bay of Panama are such that during the past year no sailing vessels entered or cleared there, and the detentions are so notorious that they would not be mentioned here but for the purpose of inviting attention to the fact that the obstacles to the transit of the isthmus are not limited to *terra firma*, but extend through and beyond the bay region, even to the Galapagos Islands on the Equator. It has been officially reported that, in rare instances, sailing vessels have been longer in beating out of the bay than is required to make the entire trip from New York to San Francisco by Cape Horn. The use of this route by sail would, therefore be attended by a charge for towage a long disiance to sea at certain seasons of the year, for which no estimate has been made in calculating the cost of operations.

Concerning the matter of harbors, upon which much stress has been laid, it is important to note that the estimates submitted by the Commission give the cost of securing equally good and capacious harbors as being $6,549,777 less on the Nicaraguan route than on the Panama; and in the judgment of the writer the problem at Greytown is one of great simplicity because of the prevailing direction and constancy of the forces forming the bars. Here the north-east trade winds, striking the salient cape, drive the waves obliquely to the westward and transport about 600,000 cubic yards of sand every year to the bight of the bay beyond. This movement may be readily intercepted and the drift impounded by a single jetty extending to deep water, and a channel may be dredged in its lee, as

was done by the Maritime Canal Company after the Panama failure.

The Panama Railroad Company has recently completed a landing pier at La Boca, costing $2,200,000, which is accessible only at high tide, through a channel dredged for three miles into the bay, so that vessels would be obliged to wait for high tide to enter and leave the proposed canal. No allowance is made for this delay in the comparison of the times required to navigate the routes, as should have been done. At Colon, on the Atlantic terminus, the piers are so directly exposed to the "northers" that during such storms the vessels are obliged to run to sea, and the last Commission estimated that a suitable entrance and harbor at this end of the line would cost $8,057,-707.

Prior to the construction of the new pier at La Boca, all the freight transported across the isthmus was lightered out to vessels anchored over three miles from shore, at a cost of about $1.50 per ton, with additional charges for port dues and storage.

The estimated cost of creating harbors on the Panama route is $10,257,707, as compared with $3,707,930 for Nicaragua; and the difference is the measure of the physical advantages in favor of the latter route in the single matter of its harbor facilities.

Moreover, it has been objected that the great regulating Lake of Nicaragua is subsiding at a rapid rate, and fears are expressed lest it disappear entirely from the face of the earth. This agitation is based upon some loose and erroneous statements of elevations, and on rainfall data recorded at a single point in the dry region on the west side of the lake. From these meagre data it is asserted that

"Lake Nicaragua has undergone marked shrinkage during the past 25 or 50 years. The shrinkage is a progressive one, and there are no known conditions by which the loss incurred can be made good. The assumption is well founded that the earlier measurements of the altitude of the lake surface, made by Galisteo and Bailey, indicating an abasement of the waters by 15 to 20 feet, were accurate. . . . A region subject to the changes which have been indicated would offer serious obstacles to the construction of a canal of the magnitude of the one proposed or to its permanency after completion."

This conclusion is based upon such assumptions as these:

"Not knowing the amount of outflow through the San Juan River for the different years from 1888 to 1898, but assuming it, for a simple convenience of measure, to be not more than one-half the amount, 84 inches, that was found for the year 1898, and taking the annual evaporation at 55 inches, we arrive at the following interesting analysis of the table of rainfall," showing "a loss of 363 inches as against a gain of 114 inches, or a net loss of 249 inches (20 feet 9 inches)."

In short, in these 19 years the lake is stated to have subsided nearly 21 feet. At this rate it should have fallen 55 feet 3 inches since 1851. Had this author of the "Defence of the Panama Route" examined the Report of Col. O. W. Childs, which is a well recognized and accurate survey of the Nicaraguan route made for Mr. Vanderbilt, in 1851, he would have found the altitude of the lake at high level to be 108 feet above the Atlantic Ocean, which elevation is confirmed by all the subsequent surveys, and especially by the line of precise levels run by the Nicaragua Canal Commission in 1898, as its present height.

Had the lake subsided at the rate above stated. it would long since have fallen below the bed of the outlet and have ceased to discharge into the sea. The Rio San Juan would have become a dry ravine,and the canal projects,whether great or small, would have been desiccated.

Such unguarded and erroneous statements have done much to retard the development of the general welfare of our country and have no justification in fact upon which to rest.

The cost, character and distribution of the work are also matters of moment in the choice of a route; and on these points it may suffice to state that, although the cube of excavation at Nicaragua is about 230 million cubic yards, as compared with 100 million remaining to be excavated at Panama, the work is so well distributed that, it is estimated by the Commission, it can be completed in two years less time than at Panama. Of this large amount, sixty per cent. consists of material which can be removed by dredging, the cheapest kind of mechanical work not sensibly affected by rains. Taking the average unit prices for which materials have been removed by hand in the tropics, the Nicaragua Canal should be built

for $153,746,323, if handled by a syndicate under ordinarily good management and conditions.

But the most important of all is the question of constructing a safe dam, which is the vital element in the execution of either project. The borings made by the Isthmian Canal Commission at Bohio on the Panama line revealed a continuous rock foundation only at an unprecedented depth below sea level; and, in a recent discussion of this subject, a member of the Commission has stated that this dam "involves novel and untried features, and few engineers, even among those who feel that they can construct it, would be ready to say in advance how the work could be done, The difficulties taken in connection with the climate and other surroundings are enormous."

The Nicaragua Route, on the contrary, presents no exceptionally difficult problems, and it has been exploited more fully than is usual in works of this character. It has many advantages which must necessarily be omitted from this limited review.

The character and amount of the tonnage, as well as its influence on railroad rates and traffic, are closely related to the question as to why the canal is not an accomplished fact, but they apply equally to both routes. They cannot be analyzed here; but economists generally concede that the effect of the canal will be to colonize remote sections, distribute low-grade, raw materals which cannot now be moved overland, stimulate manufactures and develop a much larger movement of high class freight for the railroads, which will far more than compensate for the slight diversion which may take place in their overland traffic.

The real obstacle to the construction of the canal, however, is located in the Capitol at Washington, where the subject has been discussed for generations. The current outlook indicates that the political clouds are not yet dissipated, and the legislation is stlll so framed as to make the great issue a factor in the next political campaign. It is believed that the House will not recede from its overwhelming majority of over 300 in favor of the "Hepburn Bill," and would not accept as a

compromise measure the "Spooner Amendment" in case it, or its equivalent, should be passed by the Senate, in which event there there will be another deadlock, with the probability of the failure of any relief measures and lapsing of the protocols which have been executed with Nicaraguan and Costa Rican Republics.

Representative Mann, of Illinois, recently remarked :

"It is a question of canal or no canal. If the Senate should adopt the Spooner substitute, the House, which passed the Hepburn bill with only two dissenting votes, would not yield. It is a desperate fight between legistion and no legislation, and I do not think that the Senate appreciates the situation. Nicaragua means a certainty of completion. Panama means uncertainty of beginning. Nicaragua means a clear title, freedom from scandal. Panama means legal and diplomatic clouds, and the possibility of almost endless scandal."

The vote of the House may be regarded as a fair expression of the desire and conviction of its constituency, and it is believed that the policy of further procrastination would be an irreparable evil inflicted upon the industries and commercial interests of the whole country. The responsibility of failure, if so it be, must necessarily be assumed by Congress, which alone has jurisdiction and which is provided with a plethora of material facts for information.

In would appear, then, that in the interests of humanity, civilization, economy, international intercourse, national development, or even of local self-interest, this country owes it to its citizens, as well as to the world, to inagurate this great undertaking, since it has virtually notified all foreign nations of its purpose to prevent any intervention on their part on this continent. The work should be commenced under the present administration, when all conditions appear so favorable.